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# **MSDS** Report

Samples : Li-polymer Battery

Model No. WN651250

**Applicant** : Dongguan Wanneng Battery Industrial Co., Ltd.

No.169, Zhen'an Road, Xiaobian Industrial Park, Changan Town, Address Dongguan City, Guangdong Province

Drafted by:

Date

Han Fuquan

Reviewed by: Song Zhipeng

Date

Approved by:

Wang Fengbing

Approved Signatory

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## **Material Safety Data Sheet**

## **Section 1-Chemical Product and Company Identification**

First Company of the		
Product Name:	Li-polymer Battery	
Model No.:	WN651250	
Ratings:	3.7V 380mAh 1.4Wh	
Weight:	7.1 g	
Manufacturer:	Dongguan Wanneng Battery Industrial Co.,Ltd.	
Address:	No.169, Zhen'an Road, Xiaobian Industrial Park, Changan Town, Dongguan City,	
	Guangdong Province	
Tel.:	+86-0769-81887801	
Emergency Telephone:	+86-0769-81887801	
Fax:	+86-0769-82254154	
Email:	vtefmudwxf@163.com	

### **Section 2- Hazards Identification**

Preparation hazards and	Not dangerous with normal use. Do not dismantle, open or shred Li-ion Battery.
classification:	Exposure to the ingredients contained within or their ingredients products could be harmful.
Apperance, Color, and Odor:	Solid object with no odor, no color.
Primary Route(s) of Exposure:	These chemicals are contained in a sealed Aluminum plastic film. Risk of exposure occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure. If this occurs, exposure to the electrolyte solution
Potential Health Effects:	contained within can occur by Inhalation, Ingestion, Eye contact and Skin contact  ACUTE (short term): see Section 8 for exposure controls In the event that this battery has been ruptured, the electrolyte solution contained within the battery would

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be corrosive and can cause burns.		
AUG STATE	<b>Inhalation:</b> Inhalation of materials from a sealed battery is not an expected route of	
/	exposure. Vapors or mists from a ruptured battery may cause respiratory irritation.	
$\times$	<b>Ingestion:</b> Swallowing of materials from a sealed battery is not an expected route of	
	exposure. Swallowing the contents of an open battery can cause serious chemical	
AVSE	burns of mouth, esophagus, and gastrointestinal tract.	
	Skin: Contact between the battery and skin will not cause any harm. Skin contact with	
X	contents of an open battery can cause severe irritation or burns to the skin.	
	Eye: Contact between the battery and the eye will not cause any harm. Eye contact	
ZIFITA	with contents of an open battery can cause severe irritation or burns to the eye.	
	CHRONIC (long term): see Section 11 for additional toxicological data	
Medical Conditions		
Aggravated by	Not applicable	
Exposure:		
Reported as carcinogen:	Not applicable	

**Section 3- Composition/Information on Ingredient** 

Section 3- Composition/information on ingredient			
<b>Chemical Composition</b>	Molecular Formula	CAS No.	Weight (%)
Lithium Cobalt Oxide	LiCoO <sub>2</sub>	12190-79-3	25
Graphite	WSCI C AVSI	7782-42-5	14
Polyvinylidene Fluoride	$(C_2H_2F_2)_n$	24937-79-9	2.5
SBR	$C_{12}H_{14}$	9003-55-8	1.5
Copper Foils	$Ag_{72}Cu_3Sn_{25}$	117797-11-2	10
Aluminum Foils	Al	7429-90-5	8
Aluminum packing Foil	AlCl <sub>3</sub> H <sub>3</sub> O <sub>3</sub>	12042-91-0	15
PE Separator	$(C_2H_4)_n$	90989-93-8	1.5
Nickel	Ni	61788-71-4	1.5
Electrolyte		N/A	5
Other	AT AT AT AT	N/A	16

Note: CAS number is Chemical Abstract Service Registry Number.

N/A=Not apply.

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#### **Section 4 - First Aid Measures**

Inhalation:	If contents of an opened battery are inhaled, remove source of contamination or	
	move victim to fresh air. Obtain medical advice.	
Skin contact:	If skin contact with contents of an open battery occurs, as quickly as possible	
	remove contaminated clothing, shoes and leather goods. Immediately flush with	
WSET	lukewarm, gently flowing water for at least 30 minutes. If irritation or pain persists,	
	seek medical attention. Completely decontaminate clothing, shoes and leather goods	
X	before reuse or discard.	
Eye contact:	If eye contact with contents of an open battery occurs, immediately flush the	
CONTRACT OF THE PARTY OF THE PA	contaminated eye(s) with lukewarm, gently flowing water for at least 30 minutes	
	while holding the eyelids open. Neutral saline solution may be used as soon as it is	
	available. If necessary, continue flushing during transport to emergency care	
AVST	facility. Take care not to rinse contaminated water into the unaffected eye or onto	
	face. Quickly transport victim to an emergency care facility.	
Ingestion:	If ingestion of contents of an open battery occurs, never give anything by mouth if	
	victim is rapidly losing consciousness, or is unconscious or convulsing. Have victim	
1/1/19	rinse mouth thoroughly with water. DO NOT INDUCE VOMITING. Have victim	
	drink 60 to 240 mL (2-8 oz.) of water. If vomiting occurs naturally, have victim lean	
	forward to reduce risk of aspiration. Have victim rinse mouth with water again.	
1000	Quickly transport victim to an emergency care facility.	

**Section 5 – Fire Fighting Measures** 

- X	Section 5 – Fire Fighting Measures
Flammable Properties	In the event that this battery has been ruptured, the electrolyte solution contain
NISET	within the battery would be flammable. Like any sealed container, battery cells may
	rupture when exposed to excessive heat; this could result in the release of
X	flammable or corrosive materials.
Suitable extinguishing	Use extinguishing media suitable for the materials that are burning.
Media	Ose extinguishing media suitable for the materials that are burning.
Unsuitable extinguishing	Not available
Media	Not available
Explosion Data	Sensitivity to Mechanical Impact: This may result in rupture in extreme cases
	Sensitivity to Static Discharge: Not Applicable
Specific Hazards arising	Fires involving Li-ion Battery can be controlled with water. When water is used,
from the chemical	however, hydrogen gas may evolve. In a confined space, hydrogen gas can form an

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		explosive mixture. In this situation, smothering agents are recommended to extinguish the fire
	Protective Equipment and	As for any fire, evacuate the area and fight the fire from a safe distance. Wear a
	precautions for firefighters	pressure-demand, self-contained breathing apparatus and full protective gear. Fight
1		fire from a protected location or a safe distance. Use NIOSH/MSHA approved
Ĭ	AVST	full-face self-contained breathing apparatus (SCBA) with full protective gear.
	NFPA	Health: 0 Flammability: 0 Instability: 0

#### Section 6 – Accidental Release Measures

Section of Theoretical Process (Victoria)	
Personal Precautions,	Restrict access to area until completion of clean-up. Do not touch the spilled
protective equipment, and	material. Wear adequate personal protective equipment as indicated in Section 8.
emergency procedures	
<b>Environmental Precautions</b>	Prevent material from contaminating soil and from entering sewers or waterways.
Methods and materials for	Stop the leak if safe to do so. Contain the spilled liquid with dry sand or earth. Clean
Containment	up spills immediately.
Methods and materials for	Absorb spilled material with an inert absorbent (dry sand or earth). Scoop
cleaning up	contaminated absorbent into an acceptable waste container. Collect all contaminated
	absorbent and dispose of according to directions in Section 13. Scrub the area with
	detergent and water; collect all contaminated wash water for proper disposal.

# Section 7 – Handling and Storage

Section / Humaning and Storage	
Handling	Don't handling Li-ion battery with metalwork. Do not open, dissemble, crush or
	burn battery. Ensure good ventilation/ exhaustion at the workplace. Prevent
/ 11/14 P	formation of dust. Information about protection against explosions and fires: Keep
	ignition sources away- Do not smoke.
Storage:	If the batteries are subject to storage for such a long term as more than 3 months, it
AWSCT	is recommended to recharge the Li-ion battery periodically.
	Storage Temperature
X	Short period less than 3 months: -20~+45°C, 75%RH Max
	Long period more than 3 months: +5°C~+35°C,75%RH Max
21779	Do not storage Li-ion battery haphazardly in a box or drawer where they may
	short-circuit each other or be short-circuited by other metal objects. Keep out of
	reach of children. Do not expose Li-ion battery to heat or fire. Avoid storage in
1000	direct sunlight. Do not store together with oxidizing and acidic materials.

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Section 8 – Exposure Controls, Personal Protection

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/	Engineering control:	Use local exhaust ventilation or other engineering controls to control sources of
\		dust, mist, fumes and vapor. Keep away from heat and open flame. Store in a cool,
ř	1797	dry place.
	Respiratory protection:	Not necessary under normal conditions.
	Skin and body Protection:	Not necessary under normal conditions, Wear neoprene or nitrile rubber gloves if
		handling an open or leaking battery.
	Eye protection:	Not necessary under normal conditions, Wear safety glasses if handling an open or
1		leaking battery.
^	Hands protection:	Wear neoprene or natural rubber material gloves if handling an open or leaking
ij	AVERT	battery.
	Others protection:	Have a safety shower and eye wash fountain readily available in the immediate
	X	work area.
	Hygiene Measures	Do not eat, drink, or smoke in work area. Maintain good housekeeping.

**Section 9-Physical and Chemical Properties** 

	Section 3-1 hysical and Chemical 1 toper ties		
7	Physical State	Form: Solid	
Ź		Color: Silver	
		Odour: Monotony	
	Change in condition:	Not available.	
	pH, with indication of the	Not applicable.	
1	concentration	Not applicable.	
ĺ	Melting point/freezing	Not available.	
	point	Not available.	
1	Boiling Point, initial	1.619	
	boiling point and Boiling	Not available.	
	range:		
	Flash Point	Not available.	
	Upper/lower flammability	Not available.	
	or explosive limits	Tvot available.	
	Vapor Pressure:	Not applicable.	

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	Vapor Density: (Air = 1)	Not applicable.
	Density/relative density	Not available.
	Solubility in Water:	Insoluble.
	n-octanol/water partition coefficient	Not available.
	Auto-ignition temperature	130°C 4W5LT 4W5LT
	Decomposition temperature	Not available.
	Odour threshold	Not available.
	Evaporation rate	Not available.
,	Flammability (soil, gas)	Not available.
	Viscosity	Not applicable.

Section 10 - Stability and Reactivity

Section 10 - Stability and Reactivity		
Stability	The product is stable under normal conditions.	
Conditions to Avoid (e.g.	Do not subject Li-ion Battery to mechanical shock.	
static discharge, shock or	Vibration encountered during transportation does not cause leakage, fire or	
vibration)	explosion.	
	Do not disassemble, crush, short or install with incorrect polarity. Avoid mechanical	
A17-7-1	or electrical abuse.	
Incompatible Materials	Not Available	
Hazardous Decomposition	This material may release toxic fumes if burned or exposed to fire.	
Products	Account formers for	
Possibility of Hazardous	Not Available	
Reaction	X X X	

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**Section 11- Toxicological Information** 

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Irritation	Risk of irritation occurs only if the cell is mechanically, thermally or electrically	
	abused to the point of compromising the enclosure. If this occurs, irritation to the	
	skin, eyes and respiratory tract may occur.	
Sensitization	Not Available	
Neurological Effects	Not Available	
Teratogenicity	Not Available	
Reproductive Toxicity	Not Available	
Mutagenicity (Genetic	Not Available	
Effects)	1vot Available	
Toxicologically	Not Available	
Synergistic Materials	NOT AVAITABLE	

**Section 12- Ecological Information** 

Section 12- Ecological Information		
General note	Water hazard class 1(Self-assessment): slightly hazardous for water.	
NUSTRI N	Do not allow undiluted product or large quantities of it to reach ground water, water	
	course or sewage system.	
Anticipated behavior of a	$\times$ $\times$ $\times$	
chemical product in		
environment/possible	Not Available // 5.77	
environmental		
impace/ecotoxicity	X X X	
Mobility in soil	Not Available	
Persistence and	Not Available	
Degradability	Not Available	
Bioaccumulation potential	Not Available	
Other Adverse Effects	Not Available	

## **Section 13- Disposal Considerations**

Product disposal recommendation: Observe local, state and federal laws and regulations.

Packaging disposal recommendation: Be aware discarded batteries may cause fire, tape the battery terminals to insulate them. Don't disassembly the battery. Completely discharge containers (no tear drops, no powder rest, scraped carefully). Containers may be recycled or re-used. Observe local, state and federal laws and regulations.

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The potential effects on the environment and human health of the substances used in batteries and accumulators; the desirability of not disposing of waste batteries and accumulators as unsorted municipal waste and of participating in their separate collection so as to facilitate treatment and recycling;

## **Section 14- Transport Information**

This report applies to by sea, by air and by land;

The Li-polymer Battery (model: WN651250) has passed the test the UN manual of tests and Criteria, Part III, subsection 38.3, according to the report ID: WSCT-BATT16031718A

The Li-polymer Battery was protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to short circuit;

The Li-polymer Battery according to Section II/Section IB of PACKING INSTRUCTION 965, or Section II of PACKING INSTRUCTION 966~967 of the 2016 IATA Dangerous Goods regulations 57<sup>th</sup> Edition may be transported. and applicable U.S. DOT regulations for the safe transport of Li-ion Battery.

More information concerning shipping, testing, marking and packaging can be obtained from label master at http://www.labelmaster.com/.

The packaging shall be adequate to avoid mechanical damage during transport, handling and stacking. The materials and pack design shall be chosen so as to prevent the development of unintentional electrical conduction, corrosion of the terminals and ingress of moisture.

The package must be handled with care and that a flammability hazard exists if the package is damaged;

Each package must be labeled with a Li-ion Battery handling label or in addition to the Class 9 hazard label.

With regard to transport, the following regulations are cited and considered:

- The International Civil Aviation Organization (ICAO) Technical Instructions.
- The International Air transport Association (IATA) Dangerous Goods Regulations.

UN number of lithium battery: UN3480 or UN3481;

UN Proper shipping name/Description (technical name): Li-ion batteries or Li-Polymer batteries contained in equipment or Li-ion batteries packed with equipment;

UN Classification (Transport hazard class): Non dangerous;

Marine pollutant(Y/N): N;

- The International Maritime Dangerous Goods (IMDG) Code.

For lithium-ion batteries by sea, provided that packaging is strong and prevent the products from short-circuit.

UN number of lithium battery: UN3480 or UN3481;

UN Proper shipping name/Description (technical name): Li-ion batteries or Li-Polymer batteries contained in equipment or Li-Polymer batteries packed with equipment;

UN Classification (Transport hazard class): Non dangerous;

Marine pollutant(Y/N): Y;

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information.



Special Provision: International maritime dangerous goods code (IMDG) 188, 230, 310, 348, 957;

- The US Hazardous Materials Regulation (HMR) pursuant to a final rule issued by RSPA
- The Office of Hazardous Materials Safety within the US Department of Transportations' (DOT) Research and Special Programs Administration (RSPA)

Section 15 – Regulatory Informa
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OSHA hazard communication standard (29 CFK 1910.1200)					
_	Hazardous	√ Non-hazardous			
	Section16 – Additional Information				
<b>/</b>	Additional Information:	The information above is believed to be accurate and represents the best			
		information currently available to us. However, concorde makes no warranty of			
50		merchantability or any other warranty, express or implied, with respect to such			
		information, and we assume no liability resulting from its use. users should			
		make their own investigations to determine the suitability of the information for			
		their particular purposes. Although reasonable precautions have been taken in			
		the preparation of the data contained herein, it is offered solely for your			
		information, consideration and investigation. This material safety data sheet			
$\times$		provides guidelines for the safe handling and use of this product; it does not and			
e e		cannot advise on all possible situations, therefore, your specific use of this			
		product should be evaluated to determine if additional precautions are required.			
		The data/information contained herein has been reviewed and approved for			
		general release on the basis that this document contains no export controlled			

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